SPECIFICATIONS

Transmission Electron Microscope

120 kV with in-column energy filter

Point resolution of <0.34 nm and lattice resolution <0.20 nm @ 120 kV, allowing a specimen tilt of +/- 75 deg

Fully integrated in-column energy filter which is factory aligned and has a dispersion of 1.175m/eV @ 120 kV

Operate over the high voltage (HV) range 60 - 120 kV, selectable in 20 kV steps with sub-ppm stability at 120 kV

For energy loss work, the HV must be variable in minimum steps of 0.2 eV with a maximum range of 2500 eV above nom HV

Koehler Illumination system for parallel beam specimen illumination over entire imaging and diffraction range

4 illuminating lenses (C1, C2, C3, C-O) Automatic Illumination Selection System

Homogeneous illumination over whole mag range (LM & HM) without user care

Constant brightness of the illumination must be automatically maintained when changing the magnification

Objective lens has to operate without any need for mini-lens

Line resolution must be 0.204 nm
Point resolution must be 0.34 nm

Electron optical integration of the spectrometer allowing any filtered image or diffraction pattern to be viewed on the screen and recorded on detection system

Spectrometer and its integration into electron optics must be factory aligned

Energy filter must provide a zero loss filtered image up to 4.5 deg in diffraction mode

Energy filter must be suitable for any detection system including microscope screen and sheet film negative or image plates

Microscope must be equipped with a state of the art PC-based computer system and an Expert Operating System with multiprocessor management system to

independently control all system components using a Windows based Graphical User Interface

Completely dry vacuum system consisting of a split flow turbo molecular pump and a scroll pump backing pre-vacuum containment with full automation

Goniometer with dedicated microprocessor controlled 5 axes motorized side entry goniometer stage, retaining eucentricity up to +/- 75 deg and accommodating 2 specimens up to 200 micron thick

Peltier cooled, slow scan charge-coupled device (SSCCD) camera with greater than 1k x 1K pixels including data acquisition and analysis software

Special illumination modes for protection of beam sensitive sample

Water chiller for power supply Nitrogen ventilation mount Compressor

Full installation and training on-site